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Approved For Release 2002/08/20 : CIA-RDP61S00137A000100110004-4
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SHIPYARD BRIEF

The Molotovsk yard is the most important yard and the only yard in the area capable of building large ocean-going vessels. Facilities include 2 covered graving-building docks, each about 1,000 feet long and 150 feet wide, and capable of building the largest of vessels, 2 transverse building ways, a large transverse shipbuilding site capable of the simultaneous construction of ten destroyers, and a ship assembly shop 350 feet long and 80 feet wide for the construction of subchasers and smaller craft.

As the building-graving docks and the ship assembly shop are covered, operations are not halted during the winter months.

[The maximum annual construction capability for this yard is estimated to be 282,000 gross register tons or 224,000 naval standard displacement tons.]

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register tons capacity and an estimated 300 feet in length.

3. ESTIMATED ANNUAL CONSTRUCTION CAPACITY

a. Merchant Vessels -- Based on the assumption that the entire facilities of the yard are utilized for the construction of merchant vessels, that adequate materials and personnel are available, and that no prefabrication is used, the annual production of the yard is estimated to be as follows:

1-shift operation -- With existing facilities and personnel working 1 shift of 40 hours per week, 148,000 gross register tons of shelter-deck standard cargo vessels or 170,000 gross register tons of passenger vessels could be built annually.

2-shift operation -- With existing facilities and personnel working 2 shifts of 40 hours per week 267,000 gross register tons of shelter-deck standard cargo vessels or 305,000 gross register tons of passenger vessels could be built annually.

3-shift operation -- With existing facilities and personnel working 3 shifts of 40 hours per week 371,000 gross register tons of shelter-deck standard cargo vessels or 429,000 gross register tons of passenger vessels could be built annually.

b. Combatant Naval Vessels -- Based on the assumption that the entire facilities of the yard are utilized for the construction of combatant naval vessels, that adequate materials and personnel are available, and that no prefabrication is used, the annual production of the yard is estimated to be as follows:

1-shift operation -- With present facilities and personnel working 1 shift of 40 hours per week 94,000 tons naval standard displacement could be built annually.

2-shift operation -- With present facilities and personnel working 2 shifts of 40 hours per week 169,000 tons naval standard displacement could be built annually.

3-shift operation -- With present facilities and personnel working 3 shifts of 40 hours per week 235,000 tons naval standard displacement could be built annually.

Attachment C

12 February 1957

MEMORANDUM FOR: Assistant Director for Research and Reports

THROUGH: Chief, Economic Research, ORR

25X1

THROUGH:

SUBJECT: CIA/RR-G-15, Comments on.

1. It is noted that subject report contains a section on shipbuilding
(Section III D) based primarily, according to the report, on ONI Port Series
Study [redacted] 25X1A2G P. 34

2. This ONI report is actually the draft of Section 64E NIS-26
submitted to ORR for review in February 1955. Review of the draft by ORR
disclosed so many errors and deficiencies that in June ONI requested that the
draft be returned for a complete rewrite. By that time ONI Port Series [redacted]
had been published - a word for word copy of the NIS draft which was withdrawn.
The shipbuilding section of the subject document unfortunately reflects some
of the errors in ONI [redacted] 25X1A2G

3. This branch has prepared and published a study of the principal
shipyard in the Arctic Area, (Molotovsk Shipyard No. 402, [redacted]) This study
apparently was not consulted in the preparation of RR-G-15. 25X1A2G

4. In view of the above it is suggested that corrections be made in
RR-G-15 Section III D and that the corrected section be coordinated with this
branch prior to publication.

25X1A9A



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G-15 + PR 70 attached - Please return to [redacted]



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NSC 26
Sec. 642

IV. Shipyard Facilities, Capacities and Technology

FIGURE 642-35 presents the major facilities of the principal shipyards in the country. In terms of the total number of ship and boat building installations, those listed are only a small part. However, the list includes all yards with a sizeable capability to build conventional tonnage. The number of small yards along the coasts and inland waterways, building small fishing vessels, barges, tugs etc., number upwards of 500. The more important of these yards, such as those at Stalingrad, Krasnoyarsk, Shchuchin, Pechengorsk, Nakhodka, produce or can produce small naval craft, tugs, oil barges and river boats. The vast majority, however, devote themselves to building smaller craft.

Because of the crude facilities and inadequate information, no estimate of the capacity of the many small yards can be made. The principal installations, however, provide a somewhat more concrete picture.

It is known that the principal yards have been expanded and modernized and in some respects are further advanced technologically than Western European Yards. In recent years most of them have been operating about fifteen hours a day on a two reduced-shift basis and building between 300 and 500,000 naval standard displacement tons annually. The first unit is believed to be approximately 60% of theoretical full strength, and the second 60% above 20% of maximum. As additional skilled workers become available, they probably will be put to work in supplementing both shifts. Several additional yards should be sufficient to raise the ability to about a 60% and 40% scale which would result from improved efficiency and additional facilities. This yield on naval construction would permit the building of standard displacement tons, besides numerous other types, these units however does not take

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REMARKS

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into consideration the large scale standardization and prefabrication which is being introduced rapidly to the industry. Expansion of current uses of these techniques in certain projects such as tanks, destroyers and even cruisers, and their introduction into other construction projects is to be expected. The most that can be said at this date, however, is that a rise in production of 25 to 50% in a national average on top of the 300,000 NAVF estimate is entirely possible.

The speed at which the rise in production occurs is dependent, of course, on many factors. Chief among these are the success of training programs for skilled workers and engineers and the success of current and future attempts to apply mass production methods to shipbuilding. Since high priority has been given to education and training in all fields, there is good reason to expect a fairly steady increase in the availability of able personnel. Implementation of modern production methods is already under way and shows no signs of letting up. Standardization of vessel types, both naval and merchant, as well advanced and standardization of parts is progressing. Submarines already are produced almost in assembly line fashion and central suppliers are utilized for manufacture and construction of large and small units. Further advancement in application of these processes is being made all the time and the emergence of one or a group of central suppliers of components and prefabricated sections for each type standardized vessel under construction is a very possibility in the relatively near future. Such suppliers could supply all building sites engaged in the construction of the particular type vessel. There are limits, of course, on the extent that such an operation can be carried out, but sufficient implementation in progress within the Soviet Union to widen greatly the productive capacity of the nation's industry. They want to have a large navy, the

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REF ID: A6524

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Areas	Estimated Value in Millions	
	Value in Millions	Value in Percent
Arctic	10	4
Baltic	10	4
Black Sea	10	4
Volga	25	10
Far East	22	10
TOTAL	77	100

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S-E-C-R-E-TAnnual Naval Vessel Production Estimate.

Based on the construction listed in Table 3, the possible production in naval SDT is estimated in Table 4.

Table 4

Estimated Naval Vessel Annual Production Capacity
of Molotovsk Shipyard No. 402

<u>Number of Vessels</u>	<u>Type</u>	<u>Class</u>	<u>Total Tonnage (SDT)</u>
3.0	Submarines	Z	5,250
2.6	Submarines	W	3,120
15.0	Subchasers	Artillerist	4,500
1.0	Cruiser	Sverdlov	14,000
4.0	Destroyers	Skoryy	12,000
<u>Total</u>			<u>38,750 to 38,870</u>

In computing the annual production, the following estimates and assumptions were made:

1. The necessary material, labor, and power would be available.

2. Only one 8-hour labor shift would be employed.

3. Vessels would remain on the ways until essentially completed. The time required to complete the cruisers above the 112-foot line has been disregarded in this estimate because the construction rate will not be affected.

4. Way time is considered to be the principal limiting factor of the production rate. Estimates have been made based on estimated and reported rates elsewhere in the USSR and modified according to geographic location of the shipyard, weather conditions which would affect construction on the open ways, and the possible advantage

S-E-C-R-E-T

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would be installed as required. An alternative to expanding the fitting-out facilities would be to move large vessels to the Rosta Naval Dockyard near Murmansk for completion, or possibly to the commercial dock in Molotovsk, where portal and floating cranes have been reported. [47]

A Capabilities.

Based on a realistic appraisal of the support required by the Soviet Northern Fleet, Table 3 presents a theoretical program for the concurrent construction of naval vessels in Molotovsk Shipyard No. 402 that will utilize all known facilities.

Table 3

Theoretical Concurrent Construction Program
for Naval Vessels in Molotovsk Shipyard No. 402 a/

<u>Location</u>	<u>Type</u>	<u>Class</u>	<u>Number of Vessels</u>	<u>Length (Feet)</u>	<u>Total Tonnage (SDT)</u>
21	Submarines	Z	4	310	7,000
21	Submarines	W	3	250	3,600
21	Subchasers	Artillerist	8	175	2,400
35	Cruisers	Sverdlov	2	689	28,000
35	Destroyers	Skoryy	4	420	12,000
39	Subchasers	Artillerist	2	175	600
<u>Total</u>					<u>53,600</u>

- a. The use of all known facilities to their maximum capability would permit the concurrent construction of 10 destroyers totaling 30,000 tons, 2 subchasers totaling 600 tons, and 2 battleships totaling 90,000 tons or a grand total of 120,600 SDT. Annual production on this basis would be about 45,000 tons. A more realistic program is presented in Table 4 and, therefore, all capability estimates used in this report are based on Table 4.

There is little evidence of new construction being laid down on the transverse ways, points 21 and 39 on Fig. 1, since 1946. It is believed, however, that these building ways would be made serviceable should the program demand.

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4. MANAGEMENT

The yard is under the control of the Ministry of Shipbuilding. The management is believed to be in the hands of naval officers, and frequent inspections are made by visiting commissions consisting of high-ranking naval officers and government officials. The competence of the present management is not known, but it has been reported that the yard's director along with about 40 administrative employees was arrested in 1949 for sabotage and was removed from office.

5. LABOR

No reliable information is available on the size or composition of the yard's labor force or the loyalty, efficiency, or capability of the workers. A U.S. naval officer, by personal observation in 1944, set an estimate of about 5,000 to 6,000 employed production workers; in 1949 another observer estimated that 6,000 persons were employed on a 3-shift operation. If these estimates are correct the yard was working at a rate considerably below its full capacity.

The degree of skill of the shipyard workers has undoubtedly improved over the years through on-the-job training, a limited apprentice training system, and a shipbuilding school in the city of Molotovsk, which offers 4-year courses.

It is estimated that 21,000 workers would be required to operate the yard on a full 3-shift basis, were sufficient personnel available and capable of producing in amounts comparable to U.S. workers.

Insofar as labor-management relationships are concerned it is presumed that the yard follows the pattern set in other Soviet industries; labor and management participating jointly in directing worker-welfare and related activities.

6. YARD SECURITY

a. Personnel Security -- The yard area is believed to be enclosed on all shoreward sides, a wooden wall 10 to 12 feet high enclosing the eastern end and a barbed-wire fence enclosing the rest of the area. Armed guards are posted at all entrances, and a pass system for admission is undoubtedly in effect.

b. Fire Protection -- Information is not available as to the yard's facilities for fire protection, although it is probable that the yard is well equipped and that when required additional equipment is available from the city of Molotovsk.

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SHIPYARD BRIEF

The Rosta Naval Shipyard is the second most important yard and is the major repair yard of the Soviet Northern Fleet. Facilities include two graving docks (656 feet long and 328 feet long) and a floating drydock reportedly of 3,000 tons lifting capacity. There are no shipbuilding ways and the yard does not engage in ship construction. An important function of this yard is the preparation of vessels for the trip over the Northern Sea route.

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ROSTA NAVAL SHIPYARD (SEVMORPUT)**1. INTRODUCTION**

The yard is located in the northwestern part of the town of Rosta ($69^{\circ}03'N.$, $33^{\circ}05'E.$) on the eastern shore of Kol'skiy Zaliv. It is bounded on the northeastern side by the Rosta River and lies just southward of the mouth of the river. The yard is approximately 2.5 nautical miles northward of the city of Murmansk.

It is the second most important yard in the Soviet Arctic area and is the major repair yard of the Soviet Northern Fleet. In addition to naval repairs it prepares both naval and merchant vessels for the eastward trip over the Northern Sea route. Its location on Kol'skiy Zaliv, an ice-free inlet, makes the yard accessible the year round. It is not known that new construction has been undertaken; however, vessels have been observed in what appears to be fitting out.

The exact date of construction of the yard is not known; however, it is reported that large-scale work was proceeding at the yard in 1936, and during World War II, upon receipt of additional equipment from the United States, the yard expanded its operations. The yard is Government owned and is under the administration of the Soviet Navy.

2. PRODUCTION RECORD

The yard is strictly a ship-repair yard and has no shipbuilding ways, although it is possible that during World War II some torpedo boats and submarines were assembled here from parts fabricated elsewhere. Major repairs can be effected to cruisers and smaller naval vessels as well as to merchant vessels.

3. ESTIMATED ANNUAL CONSTRUCTION CAPACITY

Since the yard does not engage in new construction, no estimate of construction capacity is given.

4. MANAGEMENT

The yard was constructed by the Government as a naval shipyard, and, as far as can be ascertained, has been continuously under the administration of the Soviet Navy. Information on personalities and management is not available.

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(2) Water -- Both fresh water and salt water are available in the yard, but the source and system of distribution are not known. It is believed, however, that the yard receives its supply from the Rosta municipal system.

(3) Steam -- The latest available information indicates that steam is supplied at 20 pounds per square inch by a stationary locomotive. It is believed to be for dockside supply, and the shops are probably supplied by a boiler in one of the shops.

(4) Compressed Air -- Compressed air is obtained from the air-compressor house (Reference Number 14, Figure 9). Further information concerning distribution and pressure is not available.

(5) Industrial Gases -- Information on industrial gases is not available.

8. OPERATIONS

Major machinery and hull repairs can be effected to cruisers and smaller vessels in the drydocks and floating repairs on larger vessels at the quay. Shops are grouped in the central part of the yard and are very well arranged. The machine shops and the plate shop, where the greatest flow of materials originate, are connected with the graving docks and the repair quay by rail and road. These shops and other principal shops are arranged more or less in three rows and are quite accessible to each other for intrashop material handling.

9. SOURCES OF MATERIALS AND COMPONENT PARTS

Most materials and parts are received from Leningrad and Moscow. Coal is probably received from Spitzbergen. Information permitting a detailed breakdown is not available.

10. ESTIMATED FUTURE OPERATIONS

Based upon past performance and current intelligence it is believed that both under normal and all-out emergency conditions the yard will continue to be the most important naval repair yard in the Soviet Arctic area and probably will continue to prepare naval and merchant vessels for the eastward trip over the Northern Sea route. Because of the relatively ice-free condition of the harbor, it appears logical to assume that the yard will remain a most important naval repair yard for the Soviet Arctic Naval Fleet.